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10/824,562

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Makoto Tsugita

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EXAMINER

CHEN, CHIA WEI A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/824,562	Applicant(s) TSUGITA ET AL.	
	Examiner CHIA-WEI A. CHEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

In the Applicant's arguments dated 11/30/2007, Applicant argues with respect to claims 4 and 9 that Niikawa in view of Matherson does not teach: "the white balance adjustment condition associated with a plurality of stop numbers."

However reading the claims in the broadest sense, Niikawa teaches the feature that the WB adjustment occurs after shading correction. The shading correction is adjusted through the use of correction tables associated with focal length and f-numbers (stop numbers). The white balance circuit adjusts the image after shading correction, which is based on a certain focal length and f-number. In this manner, only the shading correction requires a plurality of correction tables for different parameters such as focal length and f-numbers. The WB correction and gamma correction circuits do not need a plurality of tables; this need is already covered by the shading correction tables.

Applicant also argues with respect to claim 5 and 10 that Niikawa in view of Matherson does not teach: "the white balance adjustment condition associated with the stop number used at the time of the actual imaging."

Note the discussion of claims 4 and 9 above. The association of correction parameters for WB and gamma correction is propagated down from the shading correction factors.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

The first page of claim 1 seems to be cut off, causing claim 1 to be incomplete:

"...causing the produced shading correction condition to be stored in..."

The examiner will read the claim as: "...causing the produced shading correction condition to be stored in said storage;"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niikawa (US 7,075,569 B2 in view of Matherson et al. (US 7,233,352 B2), and further in view of Suzuki (US 5,504,525).

As to claim 1, Niikawa teaches, in figure 13, a digital camera (1) for photo-electrically transducing an image of an object field formed by an image pick-up lens (30) into an image signal representing the object field, comprising:

- an image sensor (303) for generating an image signal representing the image of the object field formed (col. 5, lines 57-61);
- a signal processor (120) for processing the image signal representing the image of the object field to produce image data (col. 7, lines 47-52);
- an output circuit (122) for outputting the image data produced (col. 7, lines 57-60);
- a controller (150) responsive to operating information for controlling said image sensor, said signal processor and said output circuit to generate a shading correction condition and a white balance adjustment condition to correct the image signal (col. 15, lines 12-16, Fig. 13);
- a storage (shading ROM 153, ROM 151) for storing the adjustment conditioning and the shading correction condition (correction conditions stored in correction tables; col. 8, lines 24-25); and
- an operating unit (keyboard 63) for receiving the operating information corresponding to an operation by an operator (col. 22, lines 1-4);
- said controller producing, upon recognition that the operating information commands manual white balance adjustment controlling calibration imaging for imaging an object placed in front of the image pick-up lens, and causing the produced shading correction condition to be stored in said storage (col. 21, line 61-col. 22, line 4);
- said controller reading out, when commanding the actual imaging to cause the generated image signal to be processed by said signal processor, the shading correction condition and the white balance adjustment condition stored in said

storage to send out a read-out correction condition to said signal processor (col. 8, lines 22-31), and

- said signal processor correcting shading of the image signal for the actual imaging, in accordance with the shading condition supplied from said controller, and also correcting white balance of the image signal for the actual imaging, in accordance with the white balance adjustment condition supplied from said controller (circuits 123 and 124 in the signal processor 120 perform shading correction and white balance correction; col. 7, line 64-col. 8, line 4; col. 8, lines 46-54);

but does not teach an operating unit comprising an automatic/manual white balance switch, and generating the shading correction condition and the white balance adjustment condition for correcting the image signal to be generated at a time of actual imaging, based on the image signal generated by said image sensor at a time of the calibration imaging.

Suzuki teaches an automatic/manual white balance switch (120).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the automatic/manual white balance switch of Suzuki with the digital camera of Niikawa to provide a white balance adjustment device which provides high accuracy white balancing in the contexts of video and photographic processing. (See col. 2, lines 37-40 of Suzuki.)

Matherson et al. teaches generating the shading correction condition and the white balance adjustment condition for correcting the image signal to be generated at a time of actual imaging, based on the image signal generated by said image sensor at a

time of the calibration imaging (characteristic planes are determined with a white calibration source; col. 3, lines 38-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the calibration imaging of Matherson et al. with the digital camera of Niikawa in order to correct color-dependent vignetting in the digital camera.

As to claim 2, Niikawa teaches wherein, in the calibration imaging, said controller produces the shading correction condition associated with a plurality of stop numbers to cause the produced correction condition to be stored in said storage (a correction table is manually designated by entering a focal length and an f-number; col. 21, line 61-col. 22, line 4; col. 8, line 24 of Niikawa).

As to claim 3, Niikawa teaches wherein said controller reads out the shading correction condition, associated with the stop number used in the actual imaging, from said storage, to send out the read-out correction condition to said signal processor (col. 8, lines 22-31 of Niikawa).

As to claim 4, Niikawa in view of Matherson et al. teaches the digital camera according to claim 1, wherein said controller in the calibration imaging produces the white balance adjustment condition associated with a plurality of stop numbers to cause the produced correction condition to be stored in said storage (a correction table is manually

designated by entering a focal length and an f-number; col. 21, line 61-col. 22, line 4; col. 8, line 24 of Niikawa).

As to claim 5, Niikawa in view of Matherson et al. teaches the digital camera according to claim 4, wherein said controller reads out the white balance adjustment condition, associated with the stop number used at the time of the actual imaging, from said storage, to send out the read-out correction condition to said signal processor (col. 8, lines 46-51 of Niikawa).

As to claims 6-10, these claims only differ from claims 1-5 in that claims 1-5 are apparatus claims whereas claims 6-10 are a method. Thus, the method of claims 6-10 is analyzed as previously discussed in claims 1-5.

Claim 11, Niikawa teaches, in figure 5, wherein said shading correction is automatically carried out in conjunction with said white balance adjustment (The shading correction circuit and white balance (WB) circuit are all part of the signal processor. The WB is carried out right after the shading correction; col. 7, lines 43-46).

Claim 12, Suzuki teaches wherein said manual white balance adjustment is carried out for manually setting the white balance under a stringent condition (each manual WB setting of Suzuki is carried out according to a specific gain adjustment, i.e., stringent condition; col. 6, lines 7-18).

Claim 13. Niikawa teaches wherein the shading correction condition is formulated and stored for correcting and adjusting the image signal data which is accurately corrected and adjusted under a variable imaging condition (The shading correction tables are formulated and stored for a variety of optical condition, i.e., variable imaging conditions,

Claim 14, Niikawa teaches wherein in performing the manual white balance adjustment, the controller produces said shading correction condition and said white balance adjustment condition, based on image signal data obtained on performing the condition-finding or calibrating image pickup operation for the purpose of said manual white balance adjustment, to cause so-produced conditions to be stored in a memory (The general controller 150 selects the corresponding correction tables for shading correction and WB correction, and outputs the tables to the corresponding circuits, based on the image signal outputted by the CCD. Here, the "condition-finding" operation is the same as the image capturing operation; col. 8, lines 22-31, 46-51).

Claim 15. Niikawa teaches, in Figure 5, wherein the controller forwards a control signal including said shading correction condition stored in the memory to the signal processor (The general controller 150 selects a shading correction condition and inputs it to the shading correction circuit 123 which is a component of the signal processor 120; col. 7, line 57-col. 8, line 4).

Claim 16, Niikawa teaches wherein the signal processor comprises a shading corrector (123) for correcting the shading, and a white balance adjustment unit (124) for adjusting the white balance of the image signal data corrected in shading (The shading correction circuit and white balance (WB) circuit are all part of the signal processor. The WB is carried out right after the shading correction; col. 7, lines 43-46)..

Claim 17, Niikawa teaches wherein the shading corrects the image signal data, from pixel to pixel, based on the shading correction condition carried on the control signal supplied from the controller ("very pixel"; col. 8, lines 16-19).

Claim 18, Niikawa teaches wherein the white balance adjustment unit adjusts the shading-corrected image signal data, from pixel to pixel, based on the white balance adjustment condition supplied from the controller (The corrections tables store correction coefficients for every pixel, and the WB conversion table is inputted from the general control 150 to the WB circuit 124; col. 8, lines 46-50)

Claim 19, Niikawa teaches wherein the signal processor comprises a gamma corrector (125), a converter (122), an image size reducing circuit (recording controller 156), and a compander (recording controller 156) (Recording controller generates a thumbnail image and image file using a predetermined compression process; col. 14, lines 16-24).

Claim 20, Niikawa teaches wherein whether the shading correction condition is to be calculated simultaneously to allow the shading correction condition to be selected singly, is user selectable (User can manually designate the correction table; col. 24, lines 47-56).

Claim 21, Niikawa teaches wherein said controller measures the luminance level of an object field based on a photographed image represented by image signal data supplied thereto from the signal processor (The general controller is able to measure a subject brightness and append that information into an image tag; Figure 8, col. 10, lines 57-62).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is (571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. C./
Examiner, Art Unit 2622


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER